

REMARKS

In response to the Office Action dated March 27, 2007, claims 1-31 have been canceled and new claims 32-41 have been added. Claims 32-41 are pending in the application.

In paragraph 3 on page 2, the Office Action indicated that the references listed within the specification were not considered.

An IDS is included herewith so that the references cited in the specification may be properly considered.

In paragraph 5 on page 2 of the Office Action, the drawings were objected to.

Applicant respectfully traverses the objection to the drawings, but in the interest of expediting prosecution have amended the drawings as suggested. Replacement sheets for the amended drawings are attached herewith.

In paragraph 7 on page 3 of the Office Action, the specification was objected to because of informalities.

Applicants respectfully traverse the objection to the specification, but in the interest of expediting prosecution have either amended the specification or amended the drawings to overcome the objections.

In paragraph 10 on page 4 of the Office Action, claims 1-16 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention

Applicants respectfully traverse the rejection, but in the interest of expediting prosecution have canceled claims 1-16 and added new claims 32-41 that overcome the rejection. Applicant respectfully submits that the new claims do not provide a narrower scope of coverage, but rather merely clarify the invention

In paragraph 12 on page 5 of the Office Action, claims 1-16 were rejected under § 103(b) as being unpatentable over Narumi et al. in view of Shukh et al. .

Applicants respectfully traverse the rejection.

Narumi et al. disclose a write pole tip layer formed beneath a second pole layer.

However, Narumi et al. fail to disclose, teach or suggest forming a third ferromagnetic pole layer on the second ferromagnetic layer having a tapered tip proximate a pole tip region, wherein the tapered tip is recessed from the air-bearing surface. Narumi et al. only discloses a first pole layer and a second pole layer with a coil structure disposed there between, wherein a write pole tip layer is formed under the second pole layer. Narumi et al. fail to disclose, teach or suggest a third ferromagnetic pole layer formed on the second ferromagnetic layer.

Narumi et al. fail to disclose, teach or suggest forming a laminated write pole tip layer coplanar and adjacent the third ferromagnetic pole layer for providing a flux path from the third ferromagnetic pole layer to the air-bearing surface. Narumi et al. disclose the write pole layer being formed beneath the second pole layer. Narumi et al. fail to disclose a third layer. Narumi et al. fail to disclose that the write pole tip layer is coplanar with any of the other pole layers.

Narumi et al. fail to disclose, teach or suggest that a non-magnetic material completely encircles and encapsulates the write pole tip layer on four sides. Rather, the top side of the write pole tip layer of Narumi et al. is not completely encapsulated by the non-magnetic material because a portion of the top of the write pole tip layer is touching the second pole layer.

Narumi et al. fail to even mention a ferromagnetic write shield layer formed over the non-magnetic material disposed on the top side of the laminated write pole tip layer.

Narumi et al. also fail to mention a first and a second ferromagnetic stud formed at the sides of the laminated write pole tip layer, the first and a second ferromagnetic stud further

connecting the first pole piece and the write shield layer for providing in-line and side magnetic shields.

Shukh et al. fail to overcome the deficiencies of Narumi et al. Shukh et al.

However, Shukh et al. fail to disclose, teach or suggest forming a third ferromagnetic pole layer on the second ferromagnetic layer. Shukh et al. only discloses a first pole layer and a second pole layer with a coil structure disposed there between, wherein a write pole tip layer is formed on the first pole layer. Shukh et al. fail to disclose, teach or suggest a third ferromagnetic pole layer formed on the second ferromagnetic layer.

Shukh et al. fail to disclose, teach or suggest forming a laminated write pole tip layer coplanar and adjacent the third ferromagnetic pole layer for providing a flux path from the third ferromagnetic pole layer to the air-bearing surface. Shukh et al. disclose the write pole layer being formed over the first pole layer. Shukh et al. fail to disclose a third layer. Shukh et al. fail to disclose that the write pole tip layer is coplanar with any of the other pole layers.

Shukh et al. fail to disclose, teach or suggest that a non-magnetic material completely encircles and encapsulates the write pole tip layer on four sides. Rather, the bottom side of the write pole tip layer of Shukh et al. is not completely encapsulated by the non-magnetic material because a portion of the bottom of the write pole tip layer is touching the first pole layer.

Shukh et al. fail to disclose, teach or suggest a ferromagnetic write shield layer formed over the non-magnetic material disposed on the top side of the laminated write pole tip layer and physically isolated from the laminated write pole tip layer and the third write pole layer. Shukh et al. does not disclose a third write pole layer. Rather, according to Shukh et al., the shield 59 is merely an extension of the second write pole layer that extends around the sides of the write pole tip layer 11.

Shukh et al. also fail to mention a first and a second ferromagnetic stud formed at the sides of the laminated write pole tip layer, the first and a second ferromagnetic stud further connecting the first pole piece and the write shield layer for providing in-line and side magnetic shields. Rather, as explained above, Shukh et al. discloses that the shield 59 is merely an extension of the second write pole layer 12 that extends around the sides of the write pole tip layer 11. Accordingly, Shukh et al. fails to provide in-line shielding since the first write pole layer 15 is recessed from the air-bearing surface and the side shield 59 formed by the extension of the second write pole layer 12 does not shield the portion of the write pole tip layer 11 that extends beyond the first write pole layer 15.

Thus, Narumi et al. and Shukh et al., alone or in combination, fail to disclose, teach or suggest the invention as defined in new independent claims 32 and 37.


Dependent claims 33-36 and 38-41 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 32 and 37, respectively. Further dependent claims 33-36 and 38-41 recite additional novel elements and limitations. Applicants reserve the right to argue independently the patentability of these additional novel aspects. Therefore, Applicants respectfully submit that dependent claims 33-36 and 38-41 are patentable over the cited references.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicant, David W. Lynch, at 423-757-0264.

Respectfully submitted,

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